

BODY BUILDER'S BOOK BULLETIN

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PRECAUTIONS WHEN MOUNTING EQUIPMENT

PURPOSE

To provide guidelines for the installation of electrical wiring, tubing and hoses in conjunction with body and accessory installation, and to provide precautions regarding the vehicle's electrical system and body mounting interference.

All incomplete vehicles manufactured by Nissan Diesel Motor Co., Ltd. conform to FMVSS according to the terms and conditions stated in the Document for Incomplete Vehicle accompanying each vehicle. It is the responsibility of the intermediate and final stage manufacturers to insure that the completed vehicle complies with pertinent FMVSS and other applicable federal, state and local requirements.

I. BODY INSTALLATION U-BOLTS

- Provide sufficient clearance at each u-bolt between the u-bolt and vehicle equipment, wiring, and tubing or hoses. Figure 1 shows a common interference problem caused by improper positioning of the body u-bolt before the u-bolt is tightened. The u-bolt plate may require trimming if the u-bolt cannot be positioned away from the fuel tank.

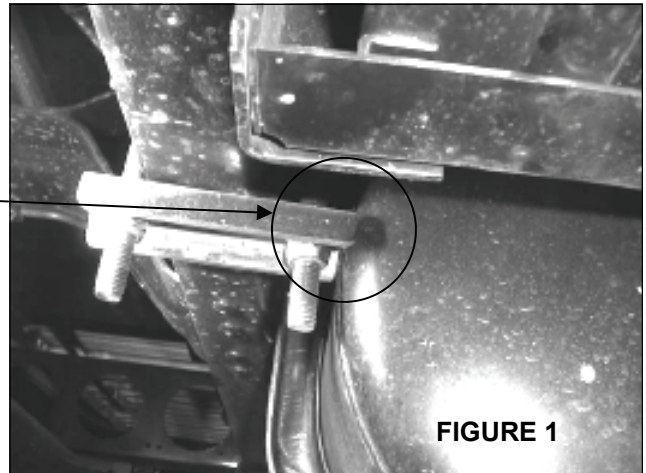


FIGURE 1

- Figure 2 shows another body u-bolt pushing against fuel lines and electrical wiring after body installation. This type of interference will lead to vehicle breakdowns. This interference may require carefully bending the tube to clear the u-bolt and fabrication of simple standoff brackets for the vehicle's wiring harness. The photo also shows warping of the lower frame flange due to the absence of a vertical support between the upper and lower flanges.

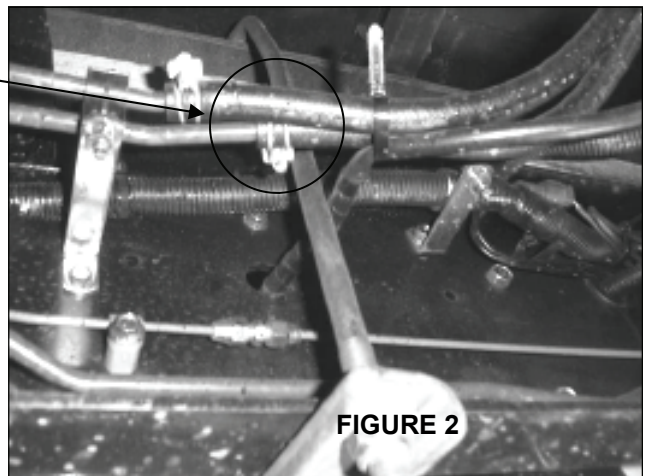
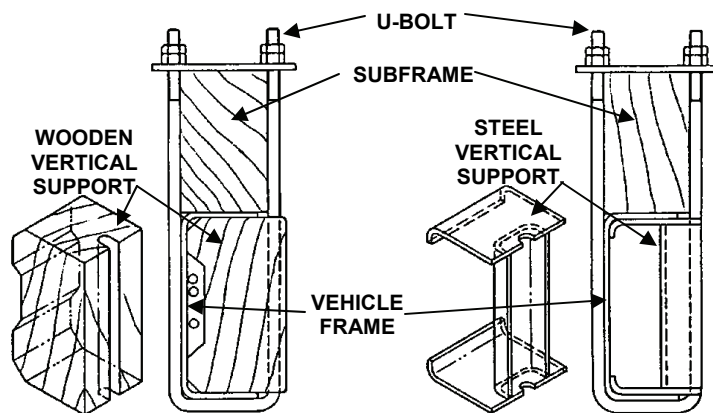


FIGURE 2



EXAMPLES OF VERTICAL SUPPORTS TO PREVENT FRAME FLANGE WARPING

II. TYING ELECTRICAL WIRING & LINES

Tying body wiring or tubing to existing equipment may cause problems. **NOTE:** Using plastic ties to secure electrical wiring to fuel lines is to be avoided as per FMVSS 108.

Figure 3 shows speedometer cables that ultimately failed because of body electrical wiring being tied down to the cables.

The following are engineering guidelines regarding the addition of electrical wiring:

- a. Install wiring to avoid metal edges, bolts and other abrasive surfaces. If such cannot be avoided, use a suitable insulator to protect wires and cover edges with appropriate protective insulation.
- b. When routing wiring through a drilled hole in metal install a grommet in the hole edge.
- c. Avoid running wiring where the temperature exceeds 176° F (80° C). If unavoidable, use heat resistant wiring, insulation and heat shields.
- d. Avoid routing wiring near brake fluid lines or fuel lines to reduce possibility of corrosion and fire from a short-circuit. Do not tie electrical wiring to brake fluid lines or fuel lines.
- e. Avoid routing electrical wiring where it may be susceptible to damage from road debris. If unavoidable, protect the wiring and connectors with fabricated shielding.
- f. Avoid routing wiring where it is susceptible to ice damage.
- g. Provide sufficient slack in wiring installed in areas of motion. Avoid routing where moving parts may pinch wiring.
- h. Avoid clamping damage. Use clips and secure wiring firmly with clips to the frame or body.
- i. Avoid loops, dangling or loose wiring except in areas of motion.
- j. Route wiring so that terminals, plugs and receptacles are not exposed to moisture.

